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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Washington, DC 20005-3096

EXAMINER

HOLLOWAY, DAVID A

ART UNIT	PAPER NUMBER
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2109

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/697,648

Applicant(s)

USA ET AL.

Examiner

David A. Holloway

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10/31/2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 10/697,648.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 10312003.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1-11 are pending in this application.

Drawings

2. The drawings are objected to because in Fig. 14 item 1401 is labeled as "Performance Management Server", while it is indicated to be a resource management server on page 38 of the specification. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is not clear as to what is intended by the grammatically incorrect "wherein said computer resource allocated said computers is resources pertaining to a plurality of physical computers".

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-11 are rejected under 35 USC 102(e) as being unpatentable over Kawamoto et al. (US 7,117,499), hereinafter Kawamoto.

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7. As to claim 1, Kawamoto discloses a computer-resource allocation method adopted by a computer system allocating a computer resource to a plurality of computers executing programs independently of each other (col. 15, lines 22-26), said method comprising the steps of:

- (1) collecting states of computer-resource utilizations of said computers (col. 5, lines 59-63, and col. 6, lines 3-6, the collected states are the measured loads),
- (2) computing coefficients of correlation (col. 11, lines 46-47, SN_i are the coefficients, the allocation ratios are interpreted to be correlation coefficients) among said computers with respect to said computer-resource utilizations of said computers on the basis of data representing said collected states of computer-resource utilizations (the SN_i are based on the measured loads, i.e., the collected states of computer-resource allocations, see col. 11, lines 46-50), and
- (3) computing computer-resource allocation quantities of said computers on the basis of said collected states of computer-resource utilizations and said computed coefficients of correlation and allocating said computer resource to said computers in accordance with said computer-resource allocation quantities (col. 2, lines 46-54, the adaptive control means instructs the hypervisor to adjust the allocation ratios if the current allocation values are different than what the new calculated values indicate, where the new calculated values are based on the collected state of the computer-resource allocations).

8. As to claim 2, Kawomoto discloses a computer-resource allocation method according to claim 1 wherein said step (3) includes the sub-steps of: forecasting states of computer-resource utilizations of said computers on the basis of data representing said collected states of computer-resource utilizations (col. 6, lines 3-6, the loads to be accomplished are determined by the load measuring modules, so there is a forecasting element involved, and the forecast is based on a CPU use ratio, a memory use ratio, and a network use ratio), and allocating said

computer resource to said computers in accordance with said forecasted states of computer-resource utilizations and said computed coefficients of correlation (col. 2, lines 46-54, 58-65).

9. As to claim 3, a computer-resource allocation method according wherein said step (3) includes the sub-steps of:

determining one of said computers as a specific computer requiring a larger allocated quantity of said computer resource (col. 12, lines 3-6),

setting a decrease in quantity for each of said computers at such a value that, the smaller the coefficient of correlation with said specific computer, the larger the value (col. 12, lines 57-64, the larger the value of SP_i , the larger the decrease in SN_j),

subtracting said decrease in quantity from a quantity of said computer resource allocated to each of said computers except said specific computer (col. 12, lines 36-39), and

transferring said decrease in quantity subtracted from said quantity of said computer resource allocated to each of said computers to said specific computer (col. 12, lines 39-40).

10. As to claim 4, Kawamoto discloses that said coefficients of correlation are switched from one values to others in dependence on a time frame and characteristics of programs running on said computers (col. 7, lines 10-13, the loads are measured every cycle time entered in entry section 1501).

11. As to claim 5, Kawamoto discloses a computer-resource management server for managing allocation of a computer resource in a computer system allocating said computer resource to a plurality of computers executing programs independently of each other (col. 2, lines 33-39), said computer-resource management server comprising:

a resource utilization state data collection unit for collecting states of computer-resource utilizations of said computers (col. 5, lines 59-63, the resource utilization state data collection

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unit is implied, since resource utilization state data is being collected), correlation-coefficient computation unit for computing coefficients of correlation among said computers with respect to said computer-resource utilizations of said computers on the basis of data representing said collected states of computer-resource utilizations (col. 11, lines 35-40 and 46-47, SN_i are the coefficients, the allocation ratios are interpreted to be correlation coefficients, a correlation-coefficient computation unit is implied), and resource allocation unit for computing computer-resource allocation quantities of said computers on the basis of said collected states of computer-resource utilizations and said computed coefficients of correlation and allocating said computer resource to said computers in accordance with said computer-resource allocation quantities (col. 2, lines 46-54, col. 11, lines 55-63, the resource allocation unit is implied).

12. As to claim 6, Kawomoto discloses a computer-resource management server according to claim 5 (col. 2, lines 3-39), said computer-resource management server further having a computer-resource-utilization-forecasting unit for forecasting states of computer-resource utilizations of said computers on the basis of data representing said collected states of computer-resource utilizations (col. 6, lines 3-6, the loads to be accomplished are determined by the load measuring modules, so there is a forecasting element involved, and the forecast is based on a CPU use ratio, a memory use ratio, and a network use ratio), wherein said resource allocation unit allocates said computer resource to said computers in accordance with said forecasted states of computer-resource utilizations (col. 2, lines 46-54).

13. As to claim 7, Kawamoto discloses a computer-resource management server according to claim 5 (col. 2, lines 33-39), wherein said resource allocation unit:

determines one of said computers as a specific computer requiring a larger allocated quantity of said computer resource (col. 12, lines 3-6),

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sets a decrease in quantity for each of said computers at such a value that, the smaller the coefficient of correlation with said specific computer, the larger the value (col. 12, line 64), subtracts said decrease in quantity from a quantity of said computer resource allocated to each of said computers except said specific computer (col. 12, lines 36-39), and

transfers said decrease in quantity subtracted from said quantity of said computer resource allocated to each of said computers to said specific computer (col. 12, lines 39-40).

14. As to claim 8, Kawamoto discloses a computer-resource management server according to claim 5 (col. 2, lines 33-39), wherein said coefficients of correlation are switched from one values to others in dependence on a time frame and characteristics of programs running on said computers (col. 7, lines 10-13, the loads are measured every cycle time entered in entry section 1501).

15. As to claim 9, Kawomoto discloses a computer system allocating a computer resource to a plurality of computers executing programs independently of each other (col. 15, lines 22-26), said computer comprising:

a computer-resource management server for collecting states of computer-resource utilizations of said computers, for computing coefficients of correlation among said computers with respect to said computer-resource utilizations of said computers on the basis of data representing said collected states of computer-resource utilizations (col. 11, lines 46-47, SN_i are the coefficients, the allocation ratios are interpreted to be correlation coefficients), computing computer-resource allocation quantities of said computers on the basis of said collected states of computer-resource utilizations and said computed coefficients of correlation (col. 2, lines 46-54), and transmitting said computer-resource allocation quantities (Abstract, last sentence, the computer resource allocation quantities are transmitted to the hypervisor via the

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allocation varying instruction), and
a control means for allocating said computer resource to said computers in accordance with
said computer-resource allocation quantities received from said computer-resource
management server (Abstract, last sentence, the hypervisor is the control means).

16. As to claim 10, Kawamoto discloses that if a specific one of said computers is
determined to be a computer, to which a larger quantity of said computer resource needs to be
apportioned (col. 12, lines 3-6), a decrease in quantity is set for each of said computers at such
a value that, the smaller the coefficient of correlation with said specific computer, the larger the
value or, the larger the coefficient of correlation with said specific computer, the smaller the
value (col. 12, line 64), said decrease in quantity is subtracted from a quantity of said computer
resource allocated to each of said computers except said specific computer (col. 12, lines
36-39), and said decrease in quantity subtracted from said quantity of said computer resource
allocated to each of said computers is transferred to said specific computer (col. 12, lines
39-40).

17. As to claim 11, Kawomoto discloses a computer system wherein said computer resource
allocated to said computers is a resource pertaining to a plurality of physical computers
(Abstract, first sentence, the resources are shared among the LPARs and the LPARs could be
on different physical machines).

Conclusion

18. The prior art made of record and not relied upon is considered pertinent to applicant's
disclosure. "Goal-Oriented Resource Allocation Manager and Performance Index Technique For
Servers", Chung et al. (US 5,675,797).

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19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David A. Holloway whose telephone number is (571)270-1899. The examiner can normally be reached on mon-fri 8:00 am - 5:00 pm (alternate Fridays off).

20. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nabil El-Hady can be reached on (571)272-3963. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

21. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DH 7/16/07


NABIL M. EL-HADY
SUPERVISORY PATENT EXAMINER